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INFORMATION DISCLOSURE  
STATEMENT

Examining Group 1651

Patent Application

Docket No. UTR-103XC1

Serial No. 09/909,735

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Frank C. Eisenschenk  
Frank C. Eisenschenk, Ph.D., Patent Attorney

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner : Leon B. Lankford, Jr.  
Art Unit : 1651  
Applicant(s) : John T. Loh, Gary Stacey, Ph.D.  
Serial No. : 09/909,735  
Filed : July 20, 2001  
For : MATERIALS AND METHODS FOR THE ENHANCEMENT OF EFFECTIVE  
ROOT NODULATION IN LEGUMES

Assistant Commissioner for Patents  
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT  
UNDER 37 C.F.R. §§ 1.97 AND 1.98

Sir:

In accordance with 37 C.F.R. § 1.56, the references on the attached form PTO-1449 are being brought to the attention of the Examiner for consideration in connection with the examination of the above-identified patent application. Copies of the cited documents are enclosed.

This information is being submitted subsequent to the later of three months after the filing date of the present application or the mailing of the first office action on the merits, but before the mailing of a final action or the notice of allowance. Accordingly, the undersigned hereby certified that to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in this statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this statement.

It is respectfully requested that the Examiner indicate consideration of the cited references by returning a copy of the attached form PTO-1449 with initials or other appropriate marks. If any additional fee is required, or to credit any overpayment, please use Deposit Account No. 19-0065.

Applicants respectfully assert that the substantive provisions of 37 C.F.R. §§ 1.56, 1.97, and 1.98 are met by the foregoing statements.

Respectfully submitted,



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Attachments: PTO Form SB/08A (Substitute for Form 1449)  
Copies of references cited (28)



PTO/SB/08A (10-01)  
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<b>Substitute for form 1449A/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		<b>Complete if Known</b>			
		Application Number	09/909,735		
		Filing Date	July 20, 2001		
		First Named Inventor	John T. Loh		
		Art Unit	1651		
		Examiner Name	Leon B. Lankford, Jr.		
Sheet	1	of	3	Attorney Docket Number	UTR-103XC1

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U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number - Kind Code* (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	U1	US-4,535,061	08-13-1985	Chakrabarty	All
	U2	US-5,173,424	12-22-1992	Stacey	All
	U3	US-5,695,541	12-09-1997	Kosanke	All
	U4	US-5,916,029	06-29-1999	Smith	All
	U5	US-			
	U6	US-			
	U7	US-			
	U8	US-			
	U9	US-			
	U10	US-			
	U11	US-			
	U12	US-			
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	U15	US-			
	U16	US-			
	U17	US-			
	U18	US-			
	U19	US-			
	U20	US-			

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				
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<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449B/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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Application Number	09/909,735
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Examiner Name	Leon B. Lankford, Jr.
Attorney Docket Number	UTR-103XC1

Sheet

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of

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**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article, (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	R1	Banfai et al. [1988] "Regulation of nod gene Expression in Bradyrhizobium japonicum," <i>Mol. Gen. Genet.</i> 214:420-424, Springer-Verlag	
	R2	Cha et al. [1998] "Production of Acyl-Homoserine Lactone Quorum-Sensing Signals by Gram-Negative Plant-Associated Bacteria," <i>Mol. Plant Microbe Int.</i> 11(11):1119-1129, The American Phytopathological Society	
	R3	Cubo et al. [1992] "Molecular Characterization and Regulation of the Rhizosphere-Expressed Genes <i>rhiABC</i> That Can Influence Nodulation by <i>Rhizobium leguminosarum</i> Biovar viciae," <i>J. Bacteriol.</i> 174:4026-4035, American Society for Microbiology	
	R4	Dockendorff et al. [1994] "NolA Represses nod Gene Expression in <i>Bradyrhizobium japonicum</i> ," <i>Mol. Plant-Microbe Interact.</i> 7(5):596-602, The American Phytopathological Society	
	R5	Fellay et al. [1998] "nodD2 of <i>Rhizobium</i> sp. NGR234 is involved in the repression of the <i>nodABC</i> operon," <i>Mol. Microbiol.</i> 27(5):1039-1050, Blackwell Science Ltd.	
	R6	Fuqua, W.C., et al. [1994] "Quorum Sensing in Bacteria: The LuxR-LuxI Family of Cell Density-Responsive Transcriptional Regulators," <i>J. Bacteriol.</i> 176(2):269-275, American Society for Microbiology	
	R7	Fuqua, W.C. and S.C. Winans [1994] "A LuxR-LuxI Type Regulatory System Activates <i>Agrobacterium</i> Ti Plasmid Conjugal Transfer in the Presence of a Plant Tumor Metabolite," <i>J. Bacteriol.</i> 176(10):2796-2806, American Society for Microbiology	
	R8	Garcia, M.L., et al. [1996] "Phenotypic Characterization and Regulation of the <i>nolA</i> gene of <i>Bradyrhizobium japonicum</i> ," <i>Mol. Plant-Microbe Interact</i> 9(7):625-635, The American Phytopathological Society	
	R9	Gillette, W.K. and G. H. Elkan [1996] " <i>Bradyrhizobium</i> ( <i>Arachis</i> ) sp. Strain NC92 Contains Two <i>nodD</i> Genes Involved in the Repression of <i>nodA</i> and a <i>nolA</i> Gene Required for the Efficient Nodulation of Host Plants," <i>J. Bacteriol.</i> 178(10):2757-2766, American Society for Microbiology	
	R10	Gray et al. [1996] "Cell-to-Cell Signaling in the Symbiotic Nitrogen-Fixing Bacterium <i>Rhizobium leguminosarum</i> : Autoinduction of a Stationary Phase and Rhizosphere-Expressed Genes," <i>J. Bacteriol.</i> 178(2):372-376, American Society for Microbiology	
	R11	Hardman, A.M. et al. [1998] "Quorum sensing and the cell-cell communication dependent regulation of gene expression in pathogenic and non-pathogenic bacteria," <i>Antonie van Leeuwenhoek</i> 74:199-210, Kluwer Academic Publishers, Netherlands	
	R12	Kleerebezem et al. [1997] "Quorum sensing by peptide pheromones and two-component signal-transduction systems in Gram-positive bacteria," <i>Mol. Microbiol.</i> 24(5):895-904, Blackwell Science Ltd.	
	R13	Loh et al. [2002] "A Two-Component Regulator Mediates Population-Density-Dependent Expression of the <i>Bradyrhizobium japonicum</i> Nodulation Genes," <i>J. Bacteriol.</i> 184(6):1-8	

Examiner  
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		Examiner Name	Leon B. Lankford, Jr.
		Attorney Docket Number	UTR-103XC1

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NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article, (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	R14	Loh, J.T. and G. Stacey [2001] "Feedback regulation of the <i>Bradyrhizobium japonicum</i> nodulation genes," <i>Mol. Microbiol.</i> 41(6):1357-1364, Blackwell Science Ltd.	
	R15	Loh <i>et al.</i> [2001] "Population density-dependent regulation of the <i>Bradyrhizobium japonicum</i> nodulation genes," <i>Mol. Microbiol.</i> 42(1):37-46, Blackwell Science Ltd.	
	R16	Loh <i>et al.</i> [1999] "The <i>Bradyrhizobium japonicum</i> <i>nodA</i> Gene Encodes Three Functionally Distinct Proteins," <i>J. Bacteriol.</i> 181(5):1544-1554, American Society for Microbiology	
	R17	Loh <i>et al.</i> [1997] "NodV and NodW, a Second Flavonoid Recognition System Regulating <i>nod</i> Gene Expression in <i>Bradyrhizobium japonicum</i> ," <i>J. Bacteriol.</i> 179(9):3013-3020, American Society for Microbiology	
	R18	Nieuwkoop <i>et al.</i> [1987] "A Locus Encoding Host Range is Linked to the Common Nodulation Genes of <i>Bradyrhizobium japonicum</i> ," <i>J. Bacteriol.</i> 169(6):2631-2638, American Society for Microbiology	
	R19	Rosemeyer <i>et al.</i> [1998] " <i>luxI</i> - and <i>luxR</i> -Homologous Genes of <i>Rhizobium etli</i> CNPAF512 Contribute to Synthesis of Autoinducer Molecules and Nodulation of <i>Phaseolus vulgaris</i> ," <i>J. Bacteriol.</i> 180(4):815-821, American Society for Microbiology	
	R20	Sadowsky <i>et al.</i> [1991] "The <i>Bradyrhizobium japonicum</i> <i>nodA</i> gene and its involvement in the genotype-specific nodulation of soybeans," <i>Proc. Natl. Acad. Sci. USA</i> 88:637-641	
	R21	Thorne and Williams [1999] "Cell Density-Dependent Starvation Survival of <i>Rhizobium leguminosarum</i> bv. phaseoli: Identification of the Role of an <i>N</i> -Acyl Homoserine Lactone in Adaptation to Stationary-Phase Survival," <i>J. Bacteriol.</i> 181(3):981-990, American Society for Microbiology	
	R22	van Brussel <i>et al.</i> [1985] "Bacteriocin <i>small</i> of Fast-Growing Rhizobia is Chloroform Soluble and is not Required for Effective Nodulation," <i>J. Bacteriol.</i> 162(3):1079-1082, American Society for Microbiology	
	R23	Wijffelman <i>et al.</i> [1983] "Repression of Small Bacteriocin Excretion in <i>Rhizobium leguminosarum</i> and <i>Rhizobium trifolii</i> by Transmissible Plasmids," <i>Mol. Gen. Genet.</i> 192:171-176, Springer-Verlag	
	R24	Yuen, J.P. and G. Stacey [1996] "Inhibition of <i>nod</i> Gene Expression in <i>Bradyrhizobium japonicum</i> by Organic Acids," <i>Mol. Plant-Microbe Interact.</i> 9(5):424-428, The American Phytopathological Society	
	R26		

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